

Exhibit 2—NAK 80

NAK 80 - No AISI designation

First produced and patented by Daido Steel, Japan in 1965. No comparable grade made in the USA.

Chemistry**Production Method**

Double melted: electric furnace then vacuum arc re-melt furnace. Hot rolled or forged to shape. Age hardened to HRC 40.

Mechanical Properties as Supplied

HRC 40	Yield (.2% offset, 41 HRC)	147,600 psi
Tensile 183,400 psi	Elongation in 2" (longitudinal)	16.1%
Reduction 41.9 %	Modulus of Elasticity (room temp.)	30.0 x 10 ⁶ psi

Charpy V-Notch Impact Strength (toughness):

Longitudinal	8.1 ft/lb.
Transverse	8.5 ft/lb.
Hardness	40 HRC

Physical Properties

Coefficient of Thermal Expansion (x 10 ⁻⁶ in/in/F°)		Coefficient of Thermal Conductivity (BTU/ft• hr• F°)	
68 F° to 212 F°	6.3	At 200 F°	23.9
68 F° to 392 F°	7.0	At 400 F°	24.4
68 F° to 572 F°	7.5		

Magnetic Properties

Maximum Magnetic Permeability	380
Saturated Magnetism (Gauss)	16,360
Residual Magnetism (Gauss)	8,500
Coercive Force (Oersted)	14.0

Unique Characteristics

- Super clean, Vacuum-Arc Remelt manufacturing process.
- 40 HRC hardness

- Age-hardened for uniformity of hardness throughout, even in heavy sections.
- When welded, NAK leaves no witness lines after re-aging.
- Uniform grain structure with no pinholes, inclusions or hard spots.
- Machines up to 20% faster than 30 HRC P20 mold steels.
- Never needs stress relieving, even after heavy machining.
- Polishes to a superior No. 1 finish, even over welded areas.

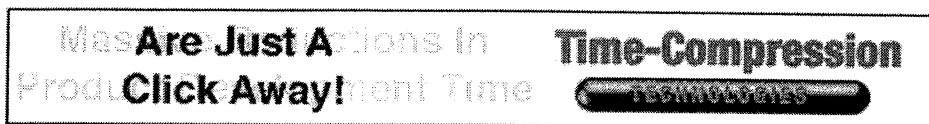
Applications

- Clear lens molds
- Extremely critical diamond finish applications
- Mold requiring special EDM finish

Available Sizes

Hot Rolled Rounds:	to 3.75" Dia.
Forged Rounds:	from 4" to 18" Dia.
Major User:	Motorola

Hot Rolled Plate:	from .876" thick x 24" wide to 3.75" thick x 24" wide
Forged Plate:	from .4" thick x 30" wide to 12" thick x 40" wide

**tool-moldmaking.com**

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Featured Products

International Mold Steel, Inc.

NAK 80 Steel

Optical Quality, High Hardness

NAK 80 produces an SPI #1 finish, making it ideal for clear lens molds. It polishes to near optic quality -- mirror finish grade #14000. It exhibits no surface hardening effect after EDMing and nothing burns cleaner. It machines about 25% faster than P-20.

Other characteristics are similar to NAK 55 . . . 40 RC hardness, invisible welds, dimensional stability, ion nitriding.

Request further product information

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High-Performance Mold Steels



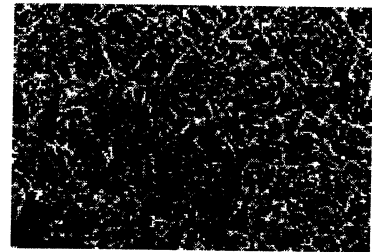
In the past 30 years there have been tremendous improvements in machine and cutting tool technologies. High-speed machining can accomplish cutting speeds and accuracies that toolmakers in the past could only dream of.

Advances in cutting tool metallurgy and coatings technology have dramatically improved tool life. However, toolmakers still limit their ability to take full advantage of these marvelous technological advances by using a mold steel that was developed in the 1950s: P-20.

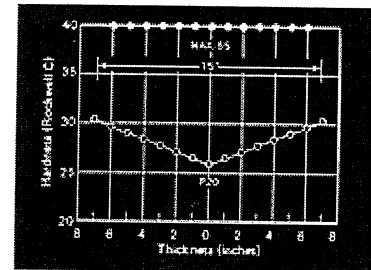
Given a cheap and familiar steel, why switch? Because there is a better way to make molds. In the past few years mold steels have been developed that are easier to machine and weld. One of these new materials is a precipitation hardening steel of uniform microstructure and hardness that was developed by Professor Asada and Dr. Watanabe of Daido Industrial College in Nagoya, Japan. This material was introduced to the plastics industry as NAK 80.

Although NAK 80 is considerably harder than P-20 (40 Rockwell C compared with 32 Rockwell C for P-20), it machines 15-20 percent faster than P-20 and can be polished to a Class 1 optic-quality finish.

To further improve machinability, a small amount of sulfur was added to NAK 80 to produce a new grade of steel called NAK 55. Some NAK 55 users report as much as 50 percent reduction in machining time compared to P-20. There are several reasons for the increased metal removal rates for NAK 55 over P-20. NAK 55 is a vacuum arc remelted, age-hardened steel. As such, it is exceptionally clean with very uniform grain structure and hardness from surface to core.



NAK 55 Grain Structure



NAK 55 Hardness Curve

What this means to the mold builder is:

- You will never hit a hard spot and break an expensive finishing cutter.
- You never need to do an intermediate stress relief. The dimensional stability of NAK 55 is such that if there is any movement during machining it will be measured by .0001 of an inch.
- Increased cutting tool life.

PROCESSING GUIDELINES

The optimum cutting conditions for NAK 55 vary by machine tools. Cutting tools incorporating the recommended geometries will produce superb finish machined surfaces, often completely eliminating grinding. NAK 55 does not work harden.

Milling: High-speed steel cutters give excellent results and very smooth machined surfaces. The best result will be obtained with cutter geometry incorporating a positive rake angle of 15 degrees–20

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degrees and a relief angle of less than 10 degrees.

Carbide cutting tools (P-40 grade) yield excellent results if the positive rake angle of the inserts is approximately 8 degrees and the relief angle is less than 10 degrees. When a negative rake carbide is used, insert grades with greater toughness than P-40 will give better results. In general, a positive rake configuration is superior to negative rake for milling NAK 55. Small, single flute carbide cutters will give excellent results.

Grinding: NAK 55 grinds easily. It is recommended that it be ground wet.

Drilling: NAK 55 drills easily. The cutting speed should be lowered as drill diameter increases. A smaller than standard twist angle and shorter length will reduce the danger of broken tools.

Tapping: NAK 55 is a 40 HRc steel; therefore the following is recommended to facilitate tapping:

- Use a sharp, premium grade tap, tin coated and spiral pointed.
- Use a tapping oil or highly chlorinated sulfurized oil. If neither is available, a mixture of 50 percent kerosene and 50 percent cutting oil also works well.

EDM: Copper or graphite electrodes are suitable, or the steel may be used as an electrode when burning mating halves together to achieve a matched fit. The recast layer from EDM for NAK 55 is soft (approximately 32 HRc). Other low alloy grades, such as P-20, or more highly alloyed steels such as S7 and H13, have extremely hard recast layers equivalent to 55–60 Rockwell C. Because the EDM white layer must be removed, the subsequent stoning or grinding of NAK 55 is much easier than with other steels.

The success of NAK 80 and NAK 55 is only partially attributable to excellent machinability. Usually a mistake in the mold or part design must be corrected by welding. It is very difficult to weld, polish and retexture the surface of P-20 without the welded area being visible in the steel of the molded part. If the mistake occurs in a highly polished textured area, the entire cavity may need to be scrapped. The mold made from NAK, when the proper procedures and NAK-W weld rods are used, will have uniform hardness across the weld. This allows the toolmaker to purposefully match the polish or etch.

A tooling engineer from Apple Computer (Cupertino, CA), explains: "In today's business environment, to shorten time-to-market, we are usually forced to build molds while the parts are being designed. This means we make a lot of changes to our molds, both during the construction and after the first tryout. Our ability to make these changes with NAK, sometimes in an already textured area, has saved us countless times. We have also found that NAK etches much better than other mold steels." Design changes can be made during the life of a part as well.

MISTAKE-PROOF STEEL: PX5

In 1989, the Daido team of engineers surveyed the mold building industry to identify what mold builders considered their worst reoccurring problem. The resounding response was "welding". Perfect welds are obtainable with the NAK series of mold steels. But, proper pre- and post-heating is required. According to the mold builders surveyed, a pre-hardening steel that doesn't crack when welded at room temperature, and could be repolished or retextured without post, would be ideal.

In 1993, Daido introduced a new pre-hardened mold steel

MACHINABILITY

called PX5 that combines the weldability and machinability of NAK with added toughness. PX5 has the same hardness as P-20 (32 Rockwell C) but is more consistent through the entire workpiece. The steel's tensile and yield strengths are similar to NAK and P-20 (see [chart](#)).

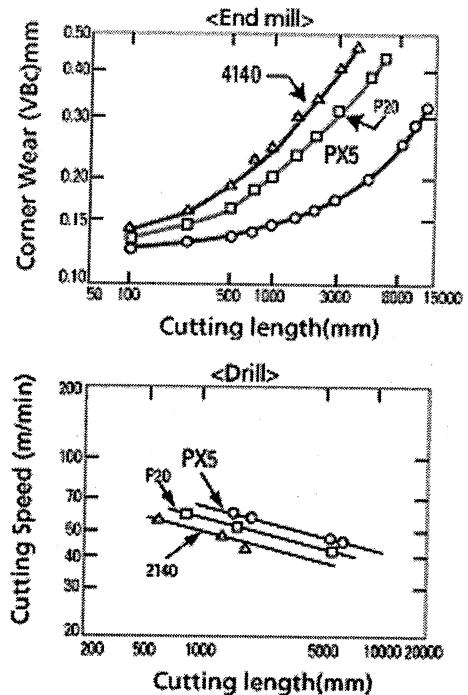
A quench and temper heat-treating process is used to manufacture PX5, but the steel is quite stable. It can be machined to size without the need to relieve stress on the block before the finish cut. The sacrifice in hardness for NAK (40 Rockwell C) is compensated for by extreme toughness. PX5 is 60 percent tougher than P-20. This improved toughness allows increased design creativity and flexibility. But it's the weldability that really makes PX5 unique.

Welding this steel requires neither pre-heating nor post-heating, which greatly reduces welding time and cost. According to Ernie Beutel, vice president of Technical Services for International Mold Steel, "the increase in hardness in the area heated during welding is very low and distortion is minimal, resulting in low overall repair time and cost. As with NAK steels, the weld can be textured or polished with no observable difference in the surface. As with NAK 55, the use of positive rake cutters will always give superior results when cutting PX5. Consistent hardness and the elimination of hard spots will improve tool life."

Ron Field, process development engineer for the Makino Die/Mold Division, decided to put PX5 to the test. Field compared the machinability of PX5 to P-20 by machining Makino waves on a Makino V55 vertical machining center. Roughing the P-20 took 102 minutes. Roughing the PX5 took 56 minutes. The superior machined finish obtainable with PX5 practically looked polished. A major mold base manufacturer obtained similar results.

When Roland Krevitt, program manager for Apple Computer specified the mold steel for the 20th anniversary Macintosh, he chose PX5. "I used PX5 and was amazed by its performance. Machining time was reduced by 30 percent, stress relieving was never required and welds in critical areas textured perfectly," said Krevitt.

"The 20th anniversary Mac was a high-profile launch—it had to be perfect. I knew we would have to weld extensively. The design was in a constant state of flux. PX5 was the only choice. I still laugh when I think of a comment made by one of the CNC operators involved in the project: 'After machining PX5, I realized that putting P-20 on my Makino is like putting kerosene in my Corvette.'"



Source: Competitive Mold Maker, Volume 4, Number 2

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Exhibit 3—PX5

PX5 – No AISI designation

First produced and patented by Daido Steel of Japan in 1990. No grade is comparable in quality from producers in the U.S.

ChemistryProduction Method

Electric furnace melted, ladle degassed and refined. Proprietary forging, rolling and heat-treating practices are utilized to produce an exceptionally fine-grained, stable, tough and easy to machine and weld mold steel. No comparable steel is produced in the U.S. The closest would be AISI P-20.

Mechanical Properties as Supplied

HRC 30-33	Yield	133,000 psi
Tensile 150,000 psi	Elongation in 2" (longitudinal)	20.0%
Reduction 48.0%		

Physical Properties

Coefficient of Thermal Expansion ($\times 10^{-6} / ^\circ\text{F}$)			Coefficient of Thermal Conductivity (Btu/ft \cdot hr \cdot $^\circ\text{F}$)	
86 $^\circ\text{F}$ to 212 $^\circ\text{F}$	6.6		At 68 $^\circ\text{F}$	24.53
86 $^\circ\text{F}$ to 392 $^\circ\text{F}$	7.1		At 212 $^\circ\text{F}$	24.48
86 $^\circ\text{F}$ to 572 $^\circ\text{F}$	7.3		At 392 $^\circ\text{F}$	24.31
86 $^\circ\text{F}$ to 752 $^\circ\text{F}$	7.5		At 572 $^\circ\text{F}$	22.67
86 $^\circ\text{F}$ to 1112 $^\circ\text{F}$	7.8		At 752 $^\circ\text{F}$	22.42

Unique Characteristics

- Exceptionally clean steel with uniform microstructure – no pinholes, inclusions or hard spots.
- 30-33 HRC hardness
- Uniform hardness throughout, even in heavy sections.
- 75% tougher than typical chrome-moly steel
- Patented chemistry suppresses weld cracking and hardness elevation in the heat-affected zone, eliminating the need for heat-treating and post-heating in most welding situations
- Machines 30-50% faster than any other P-20 type steel

- Never needs stress relieving

Applications

Plastic injection molds

Rubber molds

Major Users Are

Parker Hannifin
Honda

General Motors
Greene Tweed

Titleist

Available Sizes

Hot Rolled or Forged Rounds	from .826 Dia to 24" Dia.
Hot Rolled or Forged Plates	from $\frac{3}{4}$ " thk. To 30" thk.

Exhibit 4—Porcerax II

Porcerax II—Material Properties

Chemistry



Production Method

Cold hydrostatic pressed powder with ferrous strengthening fibers then sintered.

Mechanical Properties

HRc 35-40

Tensile Strength: 63990 - 71100 LBS./IN.²

Heat Transfer Co-efficient: Room Temp. 16.93 - 19.35 Btu/ft. hr. F

Linear Expansion: (@20 - 150°C) 6.67 - 6.94 in./in. F

Unique Characteristics

- The end product is 25% air by volume.
- The structure of the steel block is fully permeated by 3, 7 or 20 micron diameter, interconnecting pores.
- Gas will freely pass through a seemingly solid block of steel.
- Pre-hardened to 35-40 HRc for wear resistance.

Applications

The application for this product is to vent hot compressed gases from plastic injection molds. Small inserts of Porcerax II are installed in critical areas of molds constructed from any mold steel. The perfect venting allowed by Porcerax II allows molders to produce parts that were previously impossible to make because the parts would be imperfect due to short shots and burning from the trapped gases.

Major Users Are

Toyota	Ford	General Motors
	Honda	Nissan

Available Sizes:

Custom cut from master blocks 8 x 12 x 27 inches.	7 Micron /
20 Micron	

Round pins from:	3/8" to 1" Dia. X 6 inches long	7
Micron		

Custom cut from master blocks 8 x 12 x 27 inches.	3 Micron
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Exhibit 5—DH2F

DH2F – No AISI designation

DH2F was developed so as to offer die and mold makers an exceptionally tough, stable, yet, easy to machine steel. DH2F supplies an excellent machined surface finish. No U.S. mill produces a similar modified H-11 steel. Modified H-11 hot work die steel supplied at HRc 40.

ChemistryProduction Method

Electric furnace melted, ladle degassed and refined. Proprietary forging, rolling and heat-treating practices are utilized to produce an exceptionally fine-grained, stable, tough and easy to machine and weld mold steel. No comparable steel is produced in the U.S.

Mechanical Properties as Supplied

HRc 38-42		Yield Strength	164,000 psi
Tensile	193,000 psi	Elongation in 2" (longitudinal)	10%
Reduction	17%		

Physical Properties

Coefficient of Thermal Expansion (x 10 ⁻⁶ /F°)			Coefficient of Thermal Conductivity (Btu/ft• hr• F°)	
68 F° to 212 F°	4.94		At 20° C	26.8
68 F° to 392 F°	6.00			
68 F° to 572 F°	6.61			
68 F° to 752 F°	7.00			
68 F° to 932 F°	7.28			
68 F° to 1112 F°	7.61			
68 F° to 1292 F°	7.72			

Unique Characteristics

- 30-42 HRc hardness
- Through hardened for exceptional dimensional stability
- Cuts mold making costs by reducing man-hours required for machining. Classified as a 'free-machining' steel

- Ideal for complex, precision molds and parts susceptible to distortion and/or deformation without needing additional heat-treating.
- Ideal for ion nitriding

Applications

- Molds for plastics
- Die cast components
- Plunger tips, sprue bushings
- Die casting dies for aluminum and zinc
- Dies for aluminum extrusions
- Press dies
- Die plate strippers
- Machine parts

Major Users Are

Magna Corp. General Motors
Various sand cast and pattern makers.

Available Sizes

Hot Rolled Rounds:		to	3.75"	Dia.
Forged Rounds:	from 4"	to	18"	Dia.

Hot Rolled Plate:	from .876" thk x 24" wide	to	3.75" thk x 24" wide
Forged Plate:	from .4" thk x 30" wide	to	12" thk x 40" wide

Exhibit 6—CX1

CX1 – No AISI designation

International Mold Steel, Inc. is in the process of introducing two new advanced tool steels produced by Daido Steel, Japan. CX1 is the first cold work die steel offered in the world that is supplied pre-heat treated to HRC 50 and machines at this hardness. Higher hardness can then be obtained by flame hardening specific areas of the tool, or hard coating the tool. This simplifies the process of producing a stamping die, thus reducing lead-time and costs. No HRC 50 steel is produced in the U.S. CX1 should be excluded from any action.

Chemistry Proprietary.

Production Method

Electric furnace melted, ladle degassed and refined. Proprietary forging, rolling and heat-treating practices are utilized to produce an exceptionally fine-grained, stable, tough and easy to machine and weld die steel. No comparable steel is produced in the U.S.

Mechanical Properties as Supplied

HRC 50	
Tensile Strength:	259,000 psi
Yield Strength:	238,000 psi
Elongation:	8 %
Reduction in Area:	19 %

Physical Properties

Coefficient of Linear Thermal Expansion ($\mu\text{m/m K}$)		Coefficient of Thermal Conductivity (Btu/ft. H. °F)	
20 °C to 200 °C	12.9	Temp. 20 °C	30.7
20 °C to 425 °C	13.9		
Density:	7.71 (Mg/m ³)		

Unique Characteristics

- The first and only 50 HRC pre-hardened tool steel easily machinable
- Cuts down cutting and processing time

- Direct finish machining
- Free from dimensional change due to heat treating

Applications

- Cold press dies
- Cold blanking dies
- Cold bending dies
- Die and Mold parts
- Back plate
- Spacer for forging dies

Exhibit 7—DC53

DC53 – No AISI designation

Developed and patented by Daido Steel in Japan in 1988. Their goal was to develop an exceptionally tough, fine-grained cold-work die steel with the advantages of a high-tempering (Up to 550°C) steel. DC53 was designed to significantly out perform AISI D-2 in a variety of cold work die applications.

Chemistry



Production Method

Electric furnace melted, ladle degassed and refined. Proprietary forging, rolling and heat-treating practices are utilized to produce an exceptionally fine-grained, stable, tough and easy to machine and weld die steel. No comparable steel is produced in the U.S.

Mechanical Properties

Dependent on heat-treating applied.

Physical Properties

Coefficient of Thermal Expansion ($\times 10^{-6} / ^\circ\text{C}$)		Coefficient of Thermal Conductivity (cal/cm • sec • $^\circ\text{C}$)	
-100°	12.2	Room Temp	0.057
-200°	12.0	100°C	0.060
-300°	12.3	200°C	0.064
-400°	12.8	300°C	0.064
-500°	13.2	400°C	0.065
-600°	13.4	500°C	0.062
-700°	13.0	600°C	
Annealed		Quenched and Tempered	

Unique Characteristics

- Higher Hardness (62-63 HRC) than D2 after heat treating
- Twice the toughness of D2 with superior wear resistance
- 20% higher fatigue strength than D2
- Smaller primary carbides than D2 protect the die from chipping and cracking
- Secondary refining process (DLF) reduces impurities
- Machines and grinds up to 40% faster than D2

- Less residual stress

Applications

- Concrete sprayer parts, rotor plates
- Stepped punch and press-punching dies
- Plastic Molds
- Swaging dies and backers
- Dies for cold forging
- Thread-rolling circular dies
- Piercing punch
- Thread-rolling dies for heat treated bolts
- Forming dies
- Stripper plates for lead frame blanking
- Gauges
- Screws for injection molding machines

Major Users Are

Aisin Automotive
Dana Corp.
Toyota

O.S.G.
K.I. USA

Exhibit 8—DH31-S

DH31-S - No AISI designation

DH31-S is a hot working die steel with the best balance of strength and toughness showing the comparable softening resistance to H-10 and twice the hardening ability of H-13.

Chemistry

[]

Physical PropertiesCoefficient of Thermal Expansion
($\times 10^{-6}$ /K)

20 – 100 ° C	11.0
20 – 200 ° C	11.4
20 – 300 ° C	11.8
20 – 400 ° C	11.8
20 – 500 ° C	12.1
20 – 600 ° C	12.4
20 – 700 ° C	12.6

Thermal Conductivity
(W/m * K)

20 ° C	26.0
100 ° C	26.7
200 ° C	27.5
400 ° C	28.4
600 ° C	29.2
700 ° C	27.9

Specific Heat
(J/kg * K)

20 ° C	435
100 ° C	452
200 ° C	478
400 ° C	554
600 ° C	707
700 ° C	883

Density
(kg/m³)

20 ° C	7800
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Unique Characteristics

- High hardening ability
- Bainite transformation starting time is twice as that of H-13, 103 min., quenching operation is easily and safely carried out without troubling such as toughness deterioration in large size dies.
- High strength – high softening resistance at elevated temperature contributes to high wear resistance.
- High toughness – DH31-S shows 60% higher toughness than H-13. High toughness is obtained even in large size dies due to high harden ability.

- High heat check resistance – Excellent heat check resistance twice or more than H-13 and leads to long life.

Applications

- Aluminum die cast dies especially for large size long life use
- Aluminum die cast parts such as pins and plunger sleeve
- Hot forging dies
- Hot pressing dies
- Aluminum extrusion dies

Exhibit 9—NAK HH

NAK HH – No AISI designation

NAK High Hard (NAK HH) was developed and patented by Daido Steel, Japan. It has the unusual properties of high hardness (HRC 45-48) combined with excellent machine ability. Its purpose is to reduce lead time and cost in the production of medium to long run plastic molds. No steel of similar chemistry or hardness is produced in the U.S. or Europe. This product is in the introduction stage in the U. S. market. U.S. mold makers are enthusiastic about the potential this product offers them to be competitive with offshore mold makers in the production of high-quality plastic injection molds.

Chemistry



Production Method

Double melted: electric furnace then vacuum arc re-melt furnace. Hot rolled or forged to shape. Age hardened to HRC 45-48.

Mechanical Properties as Supplied

Hardness 45 HRC	
Tensile Strength (MPa)	1385 longitudinal, 1359 transverse
Yield Strength (.2% MPa)	1031 longitudinal, 1009 transverse
Reduction of Area	22 % longitudinal, 6 % transverse
Elongation	11 % longitudinal, 4 % transverse
Charpy U-notch Impact Strength (J/cm sq)	16 longitudinal, 11 transverse

Physical Properties

Coefficient of Thermal Conductivity (Btu/ft. H . ° F)	
Temp. 20 ° C	43.9
Density:	7.78 (Mg/m ³)

Unique Characteristics

- Vacuum-Arc Re-meld manufacturing process
- 45-48 HRC

Exhibit 10
Customer Certifications and Letters

AMBA

American Mold Builders Association

OLAV L. BRADLEY
President

SCOTT HARRIS
Vice President

CHRIS JONES
Secretary

JAMES MONROE
Treasurer

JEANETTE BRADLEY
Executive Director

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MARK R. KRAJNIAK

PETER MANSHIP

HELMUT MUELLER

November 2, 2001

MEMO TO: Tom Shade — International Mold Steel

FROM: Jeanette Bradley, Executive Director

It has been brought to my attention that the U.S. International Trade commission recently cleared the way for President Bush to impose higher tariffs and other hurdles on steel coming into the country from foreign sources. The Commission, an independent government agency, ruled that the domestic steel industry has been "seriously injured" by foreign steel makers flooding the country with cheap, imported steel that pushed U.S. steel prices to 20-year lows.

It is our understanding that several major U.S. steel companies have been battling offshore competition. Bethlehem Steel declared Chapter 11 bankruptcy on October 15. The company claims it was done in by cheap imports, anemic demand which has created a glut of capacity, and a \$3 billion tab for healthcare liabilities it owes retirees and their families. Bethlehem, the nation's #3 steel maker, is looking for a buyer, but analysts fear that if the company lowers prices to maintain cash flow, it could have a negative impact on other steel companies because of their heavy debt loads.

Some industry experts claim that the large steel firms have failed to respond to market conditions like the more nimble and efficient steel "mini-mills" have done. Critics have even said that tariffs would be nothing more than support for inefficient steel producers that would serve to keep prices artificially high.

I, as well as our 450 members can sympathize with the steel industry with respect to foreign competition. We, too, struggle to maintain competitiveness for our moldmaking companies in an atmosphere of cheap molds being imported from places like China, Taiwan and Singapore. However, tariffs can be a two-edged sword. Tariffs can be good news for the steel industry, which will probably see much higher prices for their products. But, it's bad news for those companies that use steel in their products, and for we moldmakers who require competitively priced steel to help us be more competitive. As an industry, moldmaking in the United States would have great difficulty absorbing or passing through to our customers, increased steel costs.



SERVING THE MOLD BUILDING INDUSTRY

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We would encourage those in Washington to tread carefully in this matter, and not paint all steels/metals with the same broad brush stroke, lest we shoot ourselves in the foot, particularly in these extremely difficult economic times. Care must be taken so that one industry's victory does not become other industries' defeat.

As moldmakers, small-business owners and citizens of the United States of America, we are participants in the dilemma of globalization and its continued impact, both good and bad, on the manufacturing sectors of this country. We would urge the Congress of the United States to consider carefully the affects of tariffs on imported steel, and weigh the consequences those tariffs might have on a host of other manufacturing industries that depend on steel.

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21338 Carlo Drive
Clinton Township, MI 48038
Ph: 586-493-5800 Fax: 586-493-5806

President George W. Bush
The White House
1600 Pennsylvania Avenue
Washington, DC 20001

November 7, 2001

Dear Mr. President,

I'm writing to express my concern over the Steel Section 201 investigation, and its possible influence on my business.

My company and I are not end users of the mold steels that are being reviewed for possible sanction action, however, we are keenly interested in the possible effects of increased tariffs on some specific products.

My company is an industry leader in the field of repairing damaged injection molds for the plastics industry, particularly those that are engraved with decorative finishes such as leather grains, wood grains, etc. There are some particular products currently being imported into the United States that have certain unique properties that are absolutely not available in any domestically manufactured steel. These products are NAK 55, NAK 80, PX 5, DC 53 and Porcerax II. These materials are currently imported and distributed by International Mold Steel, Inc. located in Florence, KY.

In my business, it is essential to our customers to get their damaged molds back into production as quickly as possible to minimize costly downtime. When the damaged mold is constructed of one of the materials mentioned above, we can assure our customer that due to the unique physical properties of the steel, repairs can be accomplished with minimal down time and usually at a cost savings as well. These materials can be welded and re-machined in substantially less time than other available grades of mold steel, therefore reducing turnaround and downtimes.

Another great concern that I have is that if the importers of unfairly targeted products are straddled with an additional 30% tariff, domestic manufacturers will undoubtedly raise their prices accordingly. This overall price increase will exert much greater pressure on the buyers of these products to seek price relief elsewhere. The only way to reduce costs and remain competitive is to move their business offshore, where steel prices are constant and consistent with U.S. prices. The obvious primary benefit to a U.S. user considering an offshore supplier is greatly reduced labor costs. This would

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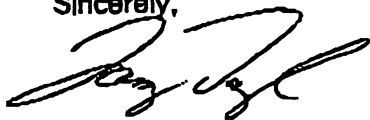
PUBLIC VERSION

further cripple an already devastated industry, which has been particularly decimated by the current economic downturn.

I hope that you and your staff will pay close attention to these and other concerns that I know have been voiced by other in my industry.

Thank you for taking the time to read this, and please know that as a combat-wounded veteran from the Vietnam era, we here in Michigan support you and your efforts to lead the country through an incredibly difficult time. God Bless America...

Sincerely,



Larry Taylor
Manager, Technical Services
Complete Surface Technologies, Inc.

PUBLIC VERSION

PUBLIC VERSION**P A R K W A Y***Molders of High Performance Plastic and Elastomeric Materials*

November 1, 2001

Parkway Products produces difficult to mold jet engine components for commercial and military markets.

We exist in an extremely competitive market. We are under constant pressures to reduce both cost and lead times for our customers. At the same time we must maintain aerospace levels of capability in our tooling and fixturing.

Several products distributed by International Mold Steel, Inc. offer us great promise in achieving our reduced cost and lead-time goals. The unique properties and excellent quality of PX5, DH2F, Nak 55 and PorceraxII will be prominent in Parkway Products' constant efforts to maintain our position of being the best at what we do.

We have found no product, in our experience, produced in the U.S. or the world that compare to the product line that International Mold Steel, Inc. carries.

Sincerely,



Charles Brouse
Manager of Project Development

PUBLIC VERSION

Tooling Express, Inc.

680 South Main, P.O. Box 1128, Bellevue, ID 83313

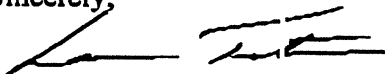
Phone (208) 788-3242 Fax (208) 788-4602

e-mail: molds@toolingexpressinc.com

To Whom It May Concern:

International Mold Steel has the highest quality mold steels on the market. These products give Tooling Express Inc. a distinct advantage in a very competitive market place. Nak55 and PX5 are the backbone of our mold production. These steels have certain advantages to them that are unparalleled in the market place. Many times we have looked at and tried other grades of steel that claimed to be similar in property and value. However, our testing showed this not to be the case. Our costs per unit were higher and our customers were not as pleased with our products. Nak55 and PX5 have no comparable grades manufactured in the United States.

Sincerely,



Lonnie Tustison
Tooling Manager
Tooling Express, Inc.

PUBLIC VERSION*Estee
Mold and Die*

1467 Stanley Ave., Dayton, Ohio 45404
Telephone: 937-224-7853 - FAX 937-228-0257
Email - ESTEEMOLD@aol.com

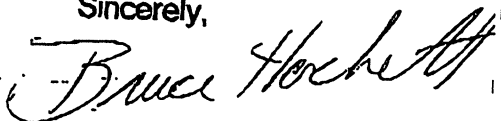
November 1, 2001

Tom Shade
International Mold Steel
6796 Powerline Dr.
Florence, KY 41042

Dear Tom:

Estee Mold & Die uses PX-5 mold steel on 50% of the molds we build for the rubber and plastics industries and there is no comparable grades of steel manufactured in the United States.

Sincerely,



Bruce Hackett
President

MANUFACTURERS OF QUALITY MOLDS SINCE 1945
.....RUBBER, PLASTIC, DIE CAST DIES.....

PUBLIC VERSION

**OSG/SOSSNER****PUBLIC VERSION**

November 2, 2001

Mr. Takeshi Urushihara
International Mold Steel, Inc.
6796 Powerline Drive
Florence, KY 41042

Dear Mr. Urushihara:

Subject: DC53 die mold steel

We chose DC53 as the material for our flat and round die products because of the superior toughness and hardness. These characteristics give us advantages to our products for the longer tool life against our competitors. Our other big advantage we receive from DC53 is that we can use a high temperature temper coordinate to heat treat. This will give us the option for nitride treatment for even longer tool life for several applications. DC53 material allows us to keep our products at a high temperature for nitride treatment, while other die steels are softened under these temperatures.

At this moment we cannot replace DC53 with other die steel in our market. If we replace DC53 with regular die steel, our customer will lose their productivities.

Sincerely,

Jeff Hayasaka
Executive VP Manufacturing
OSG Tap & Die Corp.

NATIONAL HEADQUARTERS
OSG Tap & Die, Inc.
676 East Fullerton Avenue
Glendale Heights, IL 60139-2599
(630) 790-1400
(800) 837-2223
Fax: (630) 653-2821

WEST COAST SALES OFFICE
OSG Tap & Die, Inc.
4711 China Avenue
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(800) 251-6784
Fax: (909) 91-6952

OSG CANADA LTD.
3375 North Service Road, Unit B9
Burlington, Ontario L7N 3G2
(905) 332-1779
(800) 263-4861
Fax: (905) 332-7426

FACTORY
OSG Tap & Die, Inc.
2100 Sidney Lanier Drive
Brunswick, GA 31525-6807
(912) 264-6600
Fax: (912) 264-3863

www.osg-sossner.com
An ISO 9001 Certified Company

PUBLIC VERSION



REDWOOD ENGINEERING COMPANY

Manufacturing Consulting Services
Domestic and International

PUBLIC VERSION

November 6, 2001

Dear Sirs,

For the past 30 years, while employed at Hewlett-Packard, Apple Computer, and Plantronics as a Tooling Program Manager, I have been engaged in the design and manufacture of plastic injection mold tooling. I managed \$50 million worth of tooling programs while at Apple, most of which were built in Asia - Japan, Taiwan, China and Singapore. During that time, I have tried a great many tool steels (both US made and foreign steels) and have come to the inescapable conclusion that the properties I require for long life injection molds could only be obtained by using materials that were manufactured in Japan by the Daido Steel Company - namely the NAK family and PX5. These tool steels have properties and qualities that are superior to P-20 and the other garden variety of tool steels produced in Asia and in the US. Although NAK and PX5 cost more than RA-40 and P-20, the savings in machining time, the ease of welding, and the reduced mold maintenance costs - all critical issues in today's highly competitive plastic mold tooling market - make the additional material cost well worth the investment.

I have standardized on NAK and PX5 such that when my tooling is fabricated here in the USA, I have specified NAK and PX5 to my domestic moldmakers also. They have all agreed that these steels are far superior to P-20 and RA40. In fact, I would go so far as to say that P-20 and RA40 are actually inferior to NAK and PX5.

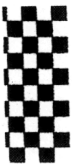
Very truly yours,

Roland Krevitt

President

Redwood Engineering Company

Exhibit 11—Unit Price Comparisons



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	SELLING PRICE COMPARISON		
		U.S. CURRENCY	
PLASTIC MOLD STEEL	AISI P-20	\$1,875.00	PER METRIC TON
	RA-40	\$7,500.00	PER METRIC TON
	NAK 80		PER METRIC TON
	NAK 55		PER METRIC TON
	PX5		PER METRIC TON
	DH2F		PER METRIC TON
	NAK HH		PER METRIC TON
	PORCERAX II		PER METRIC TON
COLD WORK DIE STEELS	D-2	\$4,408.00	PER METRIC TON
	DC-53		PER METRIC TON
	CX1		PER METRIC TON
DIE CAST STEELS	H-13	\$5,510.00	PER METRIC TON
	DH31S		PER METRIC TON

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